

USSR

UDC 539.3

MAKHORT, F. G., Kiev, Institute of Mechanics AN Ukr SSR

"A Contribution To the Theory of Surface Wave Propagation in a Prestressed Elastic Body"

Kiev, Academiya Nauk Ukr SSR, Prikladnaya Mekhanika, Vol 7, No 2, Feb 71, pp 34-40

Abstract: The effect of finite and small initial deformations on the velocity of surface Rayleigh waves in a non-linear elastic, originally isotropic body with elasticity potential of an arbitrary form as studied within the frame of finite initial deformation theory, in the Lagrangian coordinates. The propagation of surface Rayleigh waves with and without consideration of the variation in body dimensions was investigated. Characteristic equations for determining the velocity of surface Rayleigh wave are derived and the numerical results of the velocity variation with initial deformation, in the case of the first variant of the theory of small initial deformations for the Murnaghan elasticity potential are presented. In the linear approximation, this variant coincides with the theory of finite initial deformations. 29 formulas, 1 figure, 10 references.

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USSR

UDC 539.3

GUZ', A. N., MAKHORT, F. G., GUSHCHA, O. I., LEBEDIEV, V. K.,
Institute of Mechanics, Academy of Sciences, Ukrainian SSR,
Institute of Electric Welding, Academy of Sciences, Ukrainian
SSR (Kiev)

"On the Theory of Wave Propagation in an Elastic Isotropic Body
With Initial Deformations"

Kiev, Prikladnaya Mekhanika, Vol 6, No 12, Dec 1970, pp 42-49

Abstract: The influence of initial deformations upon the propagation velocity of elastic waves in an isotropic body is studied within the framework of the theory of finite initial deformations and several variants of the theory of small initial deformations in terms of Lagrange coordinates, with the use of Green's deformation tensor. Proof is given of the conditions that must be satisfied by the form of the elastic potential in order to explain the experimentally obtained rules. Research results for organic glass are presented. The values of second- and third-order elastic constants for organic glass are computed. 2 figures, 1/1 15 bibliographic entries.

MAKHOTIN, E.A

NO NB
NO LOC

- 157 -

59265 59265

6-7

SESSION XIII

XIII-1. SELECTIVE GROWTH OF EPITAXIAL LAYERS OF $AlGa_{1-x}$ AS SOLID SOLUTIONS[illegible]

The present paper is devoted to a study of the process of selective growth of layers of Al₂O₃ on solid solutions on the surface of nonstoichiometric gallium arsenide. In the present work, aluminum oxide films were synthesized by the method of selective oxidation of gallium arsenide. The technique was applied by etching of organoaluminum compound in which the subsequent selective etching created "windows" of the substrate not protected by the solid solution layers on the basis of liquid epitaxy from a melt of gallium oxides was carried out by the method of liquid epitaxy from a melt of gallium oxides was carried out by the method of liquid epitaxy from a melt of gallium oxides at temperatures of 950-850° C in arsenic trioxide atmosphere. An estimate of the quality of the epitaxial layers and reproducibility of the composition with respect to area and from process to process was made by certain methods. The parameters of the light diodes obtained on the grown layers by the method of selective fine diffusion.

USSR

UDC: 621.374.5

MAKHOTIN, S. F.

"Investigation of the Signal Instability at the Output of a Transistor Stage for the Case of a High-Amplitude Sinusoidal Signal at the Input"

Sb. tr. Leningr. in-t inzh. zh.-d. transp. (Collected Works of the Leningrad Institute of Railway Transportation Engineers), 1970, vyp. 310, pp 63-69
(from RZh-Radiotekhnika, No 5, May 71, Abstract No 56295)

Translation: The phase instability of the output signal of a transistor shaping circuit for actuating systems with common base and common emitter is theoretically studied. It is shown that a common-base circuit gives less signal phase instability. Bibliography of five titles. Resumé.

1/1

USSR

UDC: 519.2

MAKHOTKIN, O. A.

"A Numerical Investigation of Procedures for Modeling a Normal and an Exponential Distribution"

V sb. Veroyatnostn. metody resheniya zadach mat. fiz. (Probabilistic Methods of Solving Problems in Mathematical Physics--collection of works), Novosibirsk, 1971, pp 165-172 (from RZh-Kibernetika, No 8, Aug 72, Abstract No 8V178)

Translation: The author investigates five procedures for modeling pseudorandom numbers on the BESM-6 computer with exponential distribution and four with normal distribution. Tables are presented for the average time of modeling a single number for different methods. V. Pagurova.

1/1

1/2 029 UNCLASSIFIED PROCESSING DATE--18SEP70
TITLE--THE DIFFERENTIAL DIAGNOSIS OF PATENCY DISTURBANCES OF THE
SPLENOPORTAL TRUNK -U-
AUTHOR--(02)-MAKHOV, N.I., ENDER, L.A.
COUNTRY OF INFO--USSR
SOURCE--KHIRURGIYA, 1970, NR 4, PP 99-104
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--DIAGNOSTIC METHODS, CIRCULATORY SYSTEM DISEASE, VEIN, LIVER,
CIRRHOSIS, THROMBOSIS, BLOOD COAGULATION, TUMOR, PANCREAS, X RAY
TECHNIQUE, SPLEEN
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1983/1218 STEP NO--UR/0531/70/000/004/0099/0104
CIRC ACCESSION NO--AP0054113
UNCLASSIFIED

2/2 029

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0054113

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE AUTHORS EVALUATED CLINICO ROENTGENOMORPHOLOGICAL CONFRONTATIONS IN 58 PATIENTS, AGED 16 TO 54 YEARS, SUFFERING FORM DIFFERENT DISTURBANCES OF THE PATENCY OF THE SPLENOPORTAL TRUNK. IN 18 CASES THERE WERE CONGENITAL DEVELOPMENTAL DEFECTS OF THE PORTAL SYSTEM, IN 11, STENOSIS OF OBLITERATION OF PORTAL VESSELS DUE TO SPREAD OF THE OBLITERATING PROCESS FROM THE UMBILICAL VEIN IN THE POSTNATAL PERIOD, IN 16, PORTAL PHLEBITIS AND THROMBOPHLEBITIS. IN LIVER CIRRHOSIS THROMBOSIS WAS REVEALED IN 7 PATIENTS. IN THE REMAINING CASES THE FOLLOWING WERE OBSERVED: PHLEBOTHROMBOSIS IN GENERAL DISTURBANCES OF THE BLOOD COAGULATION SYSTEM. THROMBOSIS IN TUMORS OF THE LIVER AND PANCREAS. THE ROENTGNEOLOGICAL SEMIOTICS OF THE ABOVE MENTIONED PATENCY DISTURBANCES OF THE SPLENOPORTAL TRUNK AND CORRESPONDING CHANGES OF THE LEVEL OF THE PORTAL PRESSURE ARE DESCRIBED. THE AUTHORS DEMONSTRATE THAT IN THE DIFFERENTIAL DIAGNOSIS OF CAUSES OF PATENCY DISORDERS OF THE SPLENOPORTAL TRUNK OF PRIMARY IMPORTANCE ARE DATA OF X RAY INVESTIGATION, INCLUDING APART FROM SPLENOPORTOGRAPHY ALSO PHLEBRGRAPHY OF THE PROXIMAL REGION OF THE PORTAL SYSTEM WITH THE AID OF ILEOMESENTERICOGRAPHY. A CONCLUSION IS MADE THAT CAVERNOUS TRANSFORMATION REPRESENTS ONE OF THE MECHANISMS OF FUNCTIONAL ADAPTATION IN DISTURBED PATENCY OF MAJOR VESSELS OF THE PORTAL SYSTEM.

UNCLASSIFIED

Acc. Nr.:

AP0029815

Ref. Code: UR 0475

PRIMARY SOURCE: Vrachebnoye Delo, 1970, No. 1, pp 69-71

STATE OF THE PANCREAS IN LIVER CIRRHOSIS

Z. A. Bondar, S. A. Tuzhilin, V. M. Makhov, N. D. Belousova
and A. I. Salutenko (Moscow)

In 80 patients with liver cirrhosis examinations revealed a reduction of the pancreatic secretory function during secretin and pancreasimine stimulation. A study with labeled lipids revealed steatorrhea. During the active phase of liver cirrhosis exacerbation of the pancreatic process was found. Examination of 29 autopsy cases of liver cirrhosis showed in all instances different changes in the pancreas — from periductular and inter- and interalobular fibrosis to phenomena of necrosis and even hemorrhages in the parenchyma of the gland and adipose tissue.

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REEL/FRAME
19681501

USSR

UDC 662.998

DZHIGIRIS, D. D., Candidate of Technical Sciences, DEH'YANENKO, YU. N.,
Engineer, MAKHOVA, M. F., Candidate of Technical Sciences, GUDZINSKIY, O. S.,
Engineer and MAZANOVA, N. I., Engineer

"Thermally Insulating Plates Based on Superfine Basalt Fibers"

Moscow, Stroitel'nyye Materialy, No 12, Dec 73, pp 19

Abstract: The basalt superfine fibers (BSFF) have a diameter less than 2 microns. These fibers are the base for the preparation of a soft, very effective insulation material which may be used in the temperature range -200 to $+700^{\circ}$ C. The BSFF have a high resistance to vibrations, acid, and steam. Values for specific volume, bonding hygroscopic tendency and rigidity are given as a function of plate thickness from 2 to 9.8 mm. The plates are prepared from a polyvinylacetate emulsion having a fiber concentration of 1.5 to 5 g/l of the BSFF. The plates were dried with a corresponding loss of weight of between 0.2-0.3%. These BSFF plates have the advantage of being composed of readily available materials and of having a short processing time -- 2-3 times less than that presently required for processing.

1/1

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1/2 010 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--DELTA AMINOLEVULINIC ACID HYDROCHLORIDE -U-

AUTHOR--(03)-ARONOVA, N.I., MAKHOVA, N.N., ZAVYALOV, S.I.

COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 266,773

REFERENCE--OTKRYTIYA IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970, 47(12)

DATE PUBLISHED--01APR70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CHEMICAL PATENT, CHEMICAL SYNTHESIS, HYDROLYSIS, CARBOXYLIC
ACID CHLORIDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAE--3004/1811

STEP NO--UR/04B2/70/000/000/0000/0000

CIRC ACCESSION NO--AA0132077

UNCLASSIFIED

2/2 010

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AA0132077

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DELTA AMINOLEVULINIC ACID
HYDROCHLORIDE (I) WAS PREPD. BY ACYLATING 2-PHENYL-5-OXAZOLINE WITH ET
SUCCINIC ACID CHLORIDE IN AN ORG. SOLVENT OF THE ALKYL PYRIDINE SERIES,
SUCH AS PICOLINE, WITH SUBSEQUENT HCL HYDROLYSIS OF THE C ACYL DERIV.
AND SEPN. OF I BY TREATING THE REACTION MASS WITH ACETONE.
FACILITY: ZELINSKII, N. D., INSTITUTE OF ORGANIC CHEMISTRY.

UNCLASSIFIED

1/2 007 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--FAVORABLE EFFECT OF GAMMA,PICOLINE ON C,ACYLATION OF
2,PHENYL,5,OXAZOLINONE -U-
AUTHOR-(03)-ARONOVA, N.I., MAKHOVA, N.N., ZAVYALOV, S.I.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, SER. KHIM. 1970, (3), 724

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--PYRIDINE, BENZENE DERIVATIVE, ORGANIC AZOLE COMPOUND, STERIC
HINDRANCE, ACYL RADICAL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1999/1883

STEP NO--UR/0062/70/000/003/0724/0724

CIRC ACCESSION NO--AP0123671

UNCLASSIFIED

2/2 007

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0123671

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. FOR ACYLATION OF 2-PHENYL-5-OXAZOLINONE, 4-METHYL-PYRIDINE, RATHER THAN THE 3-ISOMER (CARTER H. E., ET AL., 1953) WAS USED. THE FOLLOWING YIELDS WERE OBTAINED FROM THE ACYLATION RUN WITH INDICATED RCOCL (R SHOWN), RESP., IN 4, 3, AND 2-METHYLPYRIDINES AND IN PYRIDINE ITSELF: CH SUB2 CH SUB2 OET 35PERCENT, 8PERCENT, TRACES, 0; CH SUB2 CH SUB2 CO SUB2 ME, 54, 10, 0,0; AND N,C SUB15 H SUB31 34, 21, 0, TRACES. THE FAVORABLE ACTION OF THE 4-ISOMER IS ASCRIBED TO STERIC HINDRANCE AFFORDED BY IT TO THE COMPETING NUCLEOPHILIC ATTACK OF THE ANION OF THE OXAZOLINONE ON THE C ATOM OF THE ACYLPYRIDINIUM CATION. FACILITY: INST. ORG. KHIM. IM. ZELINSKOGO, MOSCOW, USSR.

UNCLASSIFIED

1/2 025 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--VISCOSITY AND STRUCTURE OF AS SUB2 X SUB5 ASI SUB3 SYSTEM GLASSES
-U-
AUTHOR--(03)--CHERNOV, A.P., DEMBOVSKIY, S.A., MAKHOVA, V.I.
COUNTRY OF INFO--USSR
SOURCE--IZV. AKAD. NAUK SSSR, NEORG. MATER. 1970, 6(4), 823-5
DATE PUBLISHED--70
SUBJECT AREAS--MATERIALS
TOPIC TAGS--ENTROPY, ACTIVATION ENERGY, GLASS STRUCTURE, SELENIUM ARSENIC
GLASS, GLASS VISCOSITY
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--2000/2189 STEP NO--UR/0363/70/006/004/0823/0825
CIRC ACCESSION NO--AP0125769
UNCLASSIFIED

2/2 025

UNCLASSIFIED

PROCESSING DATE--30DCT70

CIRC ACCESSION NO--AP0125769

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE VISCOSITY OF GLASSES IN THE AS SUB2 X SUB3 ASI SUB3 (WHERE X EQUALS S, SE) SYSTEMS WAS INVESTIGATED. ANAL. OF THE ACTIVATION PARAMETERS OF THE VISCOSITY MADE IT POSSIBLE TO FORMULATE A CONCLUSION AS TO THE STRUCTURE OF THE GLASS AND TO SHOW THE INTERRELATION BETWEEN THE STRUCTURE AND THE PREVIOUSLY STUDIED PHASE DIAGRAMS. THE PREVIOUSLY USED TECHNIQUES WERE USED FOR THE SYNTHESIS OF THE COMPS. AND FOR THE VISCOSITY MEASUREMENTS. THE VISCOSITY BEHAVIOR FOR GLASSES OF BOTH SYSTEMS IS SIMILAR. THE INTERACTION BETWEEN AS SUB2 X SUB3 AND ASXI HAS A EUTECTIC CHARACTER, WITH THE COMPS. OF THE EUTECTICS BEING SIMILAR TO 35 AND 45 MOLE PERCENT ASI SUB3, RESP. THE SOFTENING TEMP. VALUES FOR THE GLASSES STUDIED, AS OBTAINED FROM THE THERMAL ANAL. DATA, ARE PRESENTED. THE BASIC INFORMATION CONCERNING THE STRUCTURE OF THE GLASSES STUDIED IS GIVEN BY THE ANAL. OF THE ACTIVATION ENTROPY OF VISCOUS FLOW IN THE SOFTENING TEMPS. REGION. THE RESP. CURVES ARE SIMILAR FOR BOTH SYSTEMS STUDIED. IN BOTH SYSTEMS A SHARP MAX. CORRESPONDS TO THE COMPN. OF THE COMPD. ASXI. IT IS OBVIOUS THAT THESE COMPS., WHICH EXIST IN THE CRYST. STATE, DET. ALSO THE STRUCTURE OF THE GLASS. FACILITY: INST. OBSHCH. NEORG. KHIM. IM. KURNAKOVA, MOSCOW, USSR.

UNCLASSIFIED

Television

USSR

UDC: 621.397(204)

YASTREBOV, V. S., SOBOLEV, G. P., MAKHMOM, V. P.

"Some Problems of Using Television Systems on Underwater Remote-Controlled Equipment"

Nekotoryye voprosy ispol'zovaniya televizionnykh sistem na podvodnykh distantionno-upravlyayemykh apparatakh. In-t okeanol. AN SSSR (cf. English above. Institute of Oceanology of the Academy of Sciences of the USSR), Moscow, 1970, 14 pp, bibliography of two titles (No 2036-70 Dep.) (from RZh-Radiotekhnika, No 12, Dec 70, Abstract No 12G227 DEP)

Translation: The authors present the characteristics of TV systems for underwater equipment and their elements. Some considerations are given on selecting the parameters of a TV system. Recommendations are given on preferable design of elements based on experimental studies. Authors' abstract.

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USSR

UDC 536.24.001.24

MAKHVILADZE, G. M., and NOVOZHILOV, B. V.

"Two-Dimensional Stability in the Combustion of Condensed Systems"

Minsk, Teplo- i massoperenos -- sb. (Heat and Mass Transfer -- Collection of Works), Vol 2, Part 2, 1972, pp 454-463 (from Referativnyy Zhurnal -- Teploenergetika, No 10, 1972, Abstract No 10G157)

Translation: The authors, who are employed by the USSR Academy of Sciences' Institute of the Problems of Mechanics and Institute of Chemical Physics, in Moscow, used a linear approximation to investigate stability in the combustion of condensed systems with respect to distortions of the front. They examine two models of the combustion process: gasless systems and a model of the flameless combustion of a solid fuel. They also discuss the question of the effect of heat dissipation on the one-dimensional stability of the gasless states. An increase in the amount of heat dissipated reduces the area of stable combustion, it being the case that one-dimensional instability appears before the combustion process is disrupted by the intense heat dissipation in the wall. (4 illustrations; 12 bibliog. ref.)

1/1

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Acc. Nr:

AP0049959

Abstracting Service:

CHEMICAL ABST.

Ref. Code:

4/70 UR0409

90179d Preparation of pyrrole derivatives. Makhsunov
A. G.; Safayev, A. S.; Madikhanov, N. (Sredneaziat. Nauch.-
Issled Inst. Neftepererab. Prom. Tashkent, USSR). Akad. Sci.
Geterotsikl. Soedin. 1970, (1), 125-6 (Russ). 1-Phenyl-2,5-bis(o-
 nitrophenoxy)pyrrole (I) was prepd. from the diacetylene glycol
 deriv. and PhNH₂. Thus, equimolar amts. bis(o-nitrophenoxy)-
 2,4-hexadiyne, PhNH₂, and Cu₂Cl₂ were heated in an org. sol-
 vent 1 hr at 160-5° to give 87% I, m. 113-16° (hexane).

Z. Jacura

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REEL/FRAME
19801897

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Acc. Nr.

AP0053761

Abstracting Service:
CHEMICAL ABST.

Ref. Code

LR0366

111206c Preparation of 2,5-disubstituted pyrroles. ~~Makhsu-~~
~~may, A. G.; Safaev, A.; Madikhanov, N. (USSR). Zh. Org.~~
~~Khim. 1970, 6(2), 401-2 (Russ). The condensation of NH₂~~
~~under pressure with ROCH₂C:CC:CC₂OR (R is 2,4,6-Cl₃-~~
~~C₆H₃, 2,4,6-Br₃C₆H₃, or 2,4,6-I₃C₆H₃) in an org. solvent contg.~~
~~CuCl gave 2,5-bis(ROCH₂-substituted)pyrroles. CPJR~~

REEL/FRAME

19830824

USSR

UDC 632.95

KAMILOVA, R. M., KHIKMATOV, A., RAKHIMOV, A. A., MAKHSUMOV, A. G., SAFAYEV, A., MIRZABAYEV, E. A.

"Herbicide"

USSR Author's Certificate No 336006, filed 7 Oct 69, published 22 May 72
(from RZh-Khimiya, No 5 (II), 1973, Abstract No 5N653)

Translation: A compound 2,5-diphenylthiophene (I) is proposed to control weeds in planted fields. In a dosage of 2-3 kg/hectare, I exhibits a herbicidal activity with respect to Shiritsa, Japanese barnyard millet, datura and partulak without damaging cotton.

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USSR

UDC 002.513.5:676.815.2:547

PORTYANSKIY, A. YE., LOKSINA, N. T., TASHPULATOV, YU. T., MAMEDOVA, V. M., and MEKHITIYEV, S. I.

"The Use of Punched Cards for the Solution of Specific Problems in IR Spectroscopy"

Moscow, Nauchno-Tekhnicheskaya Informatsiya, Seriya 1 -- Organizatsiya i Metodika Informatsionnoy Raboty, No 2, 1970, pp 28-30

Abstract: The article describes a direct code developed by the authors for cataloging data and solving specific spectrochemical problems which occur in the practical analysis of aliphatic nitriles ($C \leq 10$). A standard K5 two-row edge-notched card is used. To facilitate the coding, a stencil (tracing paper) with code scheme and elements (some of them borrowed from the EMS system) is pasted onto each punched card. The horizontal rows of perforations are designed for recording (all) absorption frequencies; and the vertical rows, for structure coding. The code scheme is supposed to reflect the relative arrangement of groups

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USSR

PORTYANSKIY, A. YE., et al., Nauchno-tehnicheskaya Informatsiya, Seriya 1 -- Organizatsiya i Metodika Informatsionnoy Raboty, No 2, 1970, pp 28-30

with respect to the CN group. The code is suitable for the cataloging of IR spectra, detailed coding of the structures of various compounds, as well as for finding "structure-spectrum" correlations.

2/2

MAKHURENKO, G.S.

Control System
(Maritime Trans)

SO DPM 50352
6 MARCH 1971

GURIA

PROBLEMS OF PLANNING IN AN AUTOMATIC CONTROL SYSTEM FOR MARITIME TRANSPORTATION.
Article by Ye. N. Vozhukhin, L. P. Gerasimov, T. D. Lopyrev, G. S. Makhurenko,
N. P. Serebrennikov, A. A. Stetsko, Moscow. ISSLEDOVANIYA PO AVTOMATIZIROVANNOMU UPRAVLENIYU
SPETSIAL'NAYA POMOCH' 1971, Tekhnicheskaya Seriya, No. 1, 1971, pp. 43-53.

The results of studying the characteristics of the moving transport economic system are discussed in this paper. The specifics of this system as a planning object are demonstrated, and the basic requirements on the creation of the planning subsystem of the Maritime (Coast) Automatic Control System are formulated.

This has permitted establishment of the theoretical principles of functioning of optimal planning and the creation of a procedural base for the development of a set of models, algorithms and planning calculation procedures.

In the most general statement, the planning problem is formulated as finding the most advantageous law of motion of the economic system in a region of the phase space defined by the given resources.

It is proposed that the planning problem in the general statement be studied by means of a model of the space conducting the excitation in order to simulate the behavior of the economic system.

The report contains a description of the models and algorithms of calculation of the fleet operations. The general problem of calculation of the fleet operations is studied, and some new laws of its improvement are advanced. In particular, the basis of adaptive algorithms. The methods of calculating calendar time and calculation of time are investigated.

A set of algorithms and programs for calculating the calendar schedule of operation of the fleet on a computer is described. It comprises three parts:

Processing the request for freight transport operations and formation of all possible sections of their schemes for movement of the ships;

Formation of all possible movement schemes for each ship;

USSR

UDC: 539.385

TERENT' YEV, V.F., MAKHUTOV, N.A., POYDA, V.G. and SHCHERBAK, A.M., Institute of Metallurgy imeni A.A. Baykov, Academy of Sciences USSR

"Influence of Surface Layers and Aging on Bauschinger Effect During Low-Cycle Loading"

Moscow, Sb. "Ustalost' metallov i splavov". "Nauka" Press, 1971, pp 41-48

Translation: This study concerns the influence of removing a grain-size thick surface layer (following the first half-cycle of loading) as well as intermediate aging at 270°C for 2 hours on the Bauschinger effect in low-carbon St.3 steel. It is shown that the Bauschinger effect in low-carbon steel is largely due to the presence of a much stronger grain-size thick surface layer as well as surface residual stresses. Removal of the surface layer after the first half-cycle of loading (in the stretch region) or aging after the first half cycle minimizes the Bauschinger effect. In both cases the decrease in Bauschinger effect is, most likely, related to the marked decrease in surface residual stresses. (6 illustrations, 18 bibliographic references; summary).

1/1

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1/2 026 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--RESISTANCE TO LOW CYCLIC LOADING OF A STEEL AFTER ARTIFICIAL AGING
-U-
AUTHOR--(02)-MAKHUTOV, N.A., SHCHERBAK, A.M. *M*
COUNTRY OF INFO--USSR
SOURCE--PROBLEMY PROCHNOSTI, VOL. 2, APR. 1970, P. 23-29
DATE PUBLISHED----APR70
SUBJECT AREAS--MATERIALS
TOPIC TAGS--CYCLIC FATIGUE LIFE, STEEL PROPERTY, PLASTIC DEFORMATION,
METAL AGING/(U)22K STEEL, (U)16GNM STEEL, (U)TS STEEL
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--2000/0253 STEP NO--UR/3663/70/002/000/0023/0029
CIRC ACCESSION NO--AP0124015

UNCLASSIFIED

2/2 026

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0124015

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. STUDY OF THE EFFECTS OF PRELIMINARY PLASTIC DEFORMATION AND SUBSEQUENT AGING ON THE FATIGUE CHARACTERISTICS OF 22K, 16GNM, AND TS STEELS SUBJECTED TO CYCLIC DEFORMATION UNTIL RUPTURE. IT IS SHOWN THAT ARTIFICIAL STRAIN AGING INCREASES THE ENDURANCE UNDER A LOW CYCLIC LOADING. FACILITY: GOSUDARSTVENNYI NAUCHNO-ISSLEDOVATEL'SKII INSTITUT MASHINOVEDENIYA, MOSCOW, USSR.

UNCLASSIFIED

1/2 025 UNCLASSIFIED PROCESSING DATE--11SEP70
TITLE--EFFECT OF AGING AND COLD WORKING ON THE RESISTANCE OF STRUCTURAL
STEELS TO PLASTIC DEFORMATION DURING LOW CYCLE LOAD -U-
AUTHOR--MAKHUTOV, N.A., SHCHERBAK, A.M., POYDA, V.G., TERENTYEV, V.F.

COUNTRY OF INFO--USSR

SOURCE--PROBL. PROCH. 1970, (1), 42-5

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--METAL AGING, COLD WORKING, LOW ALLOY STEEL, STRUCTURAL STEEL,
METAL DEFORMATION/(U)22K LOW ALLOY STEEL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1984/1408

STEP NO--UR/3663/70/000/001/0042/0045

CIRC ACCESSION NO--AT0100068

UNCLASSIFIED

2/2 025

UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AT0100068

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. WITH MOST METALS THE BAUSCHINGER EFFECT IS SHOWN IN A RADICALLY DECREASING PLASTICITY IN THE 1ST CYCLE UPON REVERSAL FROM TENSION TO COMPRESSION. THE KNOWN REON. OF THIS EFFECT BY DEFORMATION AND AGING WAS REEXPLORED WITH BOILER STEEL 22K (C 0.3, SI 0.26, MN 0.80, NI 0.20, CR 0.12, CU 0.015PERCENT) AND LOW C STEEL DEFORMED AT 0.5-10.0PERCENT THEN AGED FOR 2 HR--2700DEGREES. APPLIED FORCE, SIGMA SUBA LARGER THAN SIGMA SUBT, THE ELASTIC LIMIT, IN THE RELATION FOR THE MEAN YIELD STRENGTH, BAR SIGMA, HAD THE USUAL SHARP LINEAR DROP TO ZERO TENSION ELASTICITY, FOLLOWED DURING THE COMPRESSION BY A PARABOLIC DECLINE TO A LOWER ELASTICITY VALUE THAN INITIALLY, IN ITS SIGMA SUBT PRIME CURVE. INITIALLY THE METAL HAD A SIGMA SUBT PRIME VALUE OF 30.8 KG-MM PRIME2, BUT AFTER DEFORMATION BY 0.5, 2.0, 5.0, AND 10.0PERCENT AND AGING 31.8, 37.2, 46.0, AND 52.0 KG-MM PRIME2. WITH BAR SIGMA EQUALS 1.17, 1.32, 1.46, 1.61, AND 1.71, SIGMA SUBT PRIME RANGED DOWN 7.1-3.55, 26.0-3.55, 26.9-7.8, AND 28.3-21., KG-MM PRIME2, RESP., FOR EACH DEFORMED TYPE. THE PHENOMENA WAS ATTRIBUTED TO THE EASE OF BLOCKING OF DISLOCATIONS: AND AS WITH 22K STEEL SIGMA SUBT PRIME BECAME STABILIZED AFTER 5-7 TOTAL CYCLES OR LESS FOR BAR SIGMA EQUALS 1.61. SIMILARLY, THE REMOVAL OF DISLOCATIONS (AND PLASTICITY) AFTER AGING AT 400DEGREES CAUSED REMOVAL OF THE BAUSCHINGER EFFECT; OR SOME REDN. IF AFTER DEFORMATION, A SURFACE LAYER WAS REMOVED ELECTROLYTICALLY.

UNCLASSIFIED

USSR

UDC 536.46

MAKHVILADZE, G. M., NOVOZHULOV, B. V., Moscow

"Two-Dimensional Stability of Combustion of Condensed Systems"

Zhurnal Prikladnoy Mekhaniki i Tekhnicheskoy Fiziki, No 5, 1971, pp 51-59.

ABSTRACT: The problem of the stability of combustion of condensed systems is studied in the linear approximation with respect to curvature of the burning front. Two simple models of combustion are studied: gasless systems and a model of flameless combustion of a solid fuel. In the first gas, the combustion products, like the initial material, are condensed, while in the latter case the solid fuel is converted to a gas, in which no chemical reactions occur. Boundaries of stability of the stable combustion mode are found. It is demonstrated that gasless systems are less stable to two-dimensional perturbations than to one-dimensional perturbations. For the model of flameless combustion, the result depends on the relationship of heat physical constants of the initial material and the combustion products. The problem is studied of the influence of heat transfer on the one-dimensional stability of gasless compositions. Increasing heat liberation decreases the area of stability of combustion, one-dimensional instability developing earlier than disruption of combustion due to strong heat transfer to the walls.

1/1

1/2 043 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--OCCURRENCE OF A DETONATION IN A NONUNIFORMLY HEATED GAS -U-
AUTHOR--(04)-ZELDOVICH, YA.B., LIBROVICH, V.B., MAKHVILADZE, G.M.,
SIVASHINSKIY, G.I.
COUNTRY OF INFO--USSR
SOURCE--PMTF, ZHURNAL PRIKLADNOI MEKHANIKI I TEKHNICHESKOI FIZIKI,
MAR.-APR. 1970, P. 76-84
DATE PUBLISHED-----70
SUBJECT AREAS--PHYSICS, ORDNANCE
TOPIC TAGS--DETONATION, SHOCK WAVE, CHEMICAL REACTION, THERMAL EFFECT
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REL/FRAME--3005/1402 STEP NO--UR/0207/70/000/000/0076/0084
CIRC ACCESSION NO--AP0133354
UNCLASSIFIED

2/2 043

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0133354

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. NUMERICAL SOLUTION OF THE PROBLEM OF THE OCCURRENCE OF A DETONATION IN A NONUNIFORMLY HEATED GAS CAPABLE OF CHEMICAL REACTION. IT IS SHOWN THAT THREE DIFFERENT REACTION REGIMES ARE POSSIBLE IN THIS CASE. IF THE TEMPERATURE DISTRIBUTION GIVEN AT THE INITIAL MOMENT IS SUCH THAT THE GAS IS HEATED ALMOST UNIFORMLY, THE REACTION OCCURS IN A THERMAL EXPLOSION REGIME. IN THE CASE OF A VERY STEEP INITIAL TEMPERATURE PROFILE A SHOCK WAVE WHICH SEPARATES FROM THE REACTION WAVE ARISES. FINALLY, THERE IS A TEMPERATURE DISTRIBUTION SUCH THAT THE SHOCK WAVE WHICH FORMS IS CAPABLE OF CAUSING A REACTION, AND A SWITCHOVER TO A STEADY DETONATION REGIME OCCURS.

UNCLASSIFIED

USSR

UDC 621.311.25:621.362:538.41.001.2

KUGUSHEV, N. M., ZLATIN, D. A., PETROV, Yu. A., MAKIN, S. A.

"Design and Construction of Electric Power Plants With Magnetohydrodynamic Generators"

Tr. Vses. proyekt. in-ta "Teploelektroproyekt" (Works of the All-Union State Institute for the Design and Planning of Electrical Equipment for Heat Engineering Installations), 1970, vyp. 9, pp 95-110 (from RZh-Elektrotehnika i energetika, No 9, Sep 70, Abstract No 9A119)

Translation: A brief exposition is given of the characteristics of practical utilization of the MHD method of energy conversion. Possible technological diagrams of electric power plants with MHD generators are described as well as methods for further developments along these lines. Consideration is given to the planning of new non-standard equipment, a brief description of the characteristics of systems for control, automation and protection of equipment, as well as basic solutions for putting together the main building. Four illustrations, bibliography of four titles.

1/1

142 015 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--CHEMISTRY OF UNSATURATED ETHERS. XXX. DIENE CONDENSATION OF
1,ALKOXY,1,3,DIENES WITH CARBONYL COMPOUNDS. CONFIGURATIONS AND
AUTHOR--(05)--YAGLONOVSKAYA, S.D., SHEKHTMAN, N.M., ANTONOVA, N.D.,
BOGATKOV, S.V., MAKIN, S.H.
COUNTRY OF INFO--USSR
SOURCE--ZH. ORG. KHIM. 1970, 6(4), 871-7
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--DIENE, CARBONYL COMPOUND, HETEROCYCLIC OXYGEN COMPOUND,
CATALYTIC HYDROGENATION, ISOMER, GAS CHROMATOGRAPHY, NMR
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
MOXY REEL/FRAME--2000/2087 STEP NO--UR/0366/70/006/004/0871/0877
IRC ACCESSION NO--AP0125674
UNCLASSIFIED

2/2 015

UNCLASSIFIED

PROCESSING DATE--30OCT70

IRC ACCESSION NO--APO125674

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE CONDENSATION OF $ROCH=CHCH=CH$ SUB2 (R IS ME OR ET) WITH OHCCO SUB2 R PRIME1 (R PRIME1 IS ME, ET, OR BU) GAVE 2,RC,6,RO SUB2 C,DISUBSTITUTED,DELTA PRIME3,DIHYDROPYRANS (I). HYDROGENATION OF I OVER PTO SUB2 CATALYST GAVE THE TETRAHYDRO ANALOGS (II). I AND II ISOMERS ARE SEPD. BY GAS CHROMATOG.; NMR SPECTRA ARE DISCUSSED; THE TRANS ISOMERS, CONTG. AXIAL RO GROUPS, HAVE SHORTER RETENTION TIMES THAN THE CIS ISOMERS (DIEQUATORIAL CONFORMATION). THE THEORETICAL CALCNS. OF THE STABILITY OF THESE ISOMERS CONFIRM THE NMR DATA. FACILITY: MOSK. INST. TONKOI KHIM. TEKHNOL. IM. LOMCNO SOVA, MOSCOW, USSR.

UNCLASSIFIED

1/2 017 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--CHEMISTRY UNSATURATED ETHERS. XXVII. SYNTHESIS OF
2,6,6,TRIALKOXYPYRAN DERIVATIVES -U-
AUTHOR--(02)-SHAVRYGINA, O.A., MAKIN, S.M.
COUNTRY OF INFO--USSR
SOURCE--KHIM. FARM. ZH. 1970, 4(3), 24-5
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--ORGANIC OXYGEN COMPOUND, BROMINATED ORGANIC COMPOUND,
INFLUENZA VIRUS, SELECTIVE DRUG EFFECT, CHEMICAL SYNTHESIS
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1998/0362 STEP NO--UR/0450/70/004/003/0024/0025
CIRC ACCESSION NO--AP0121050
UNCLASSIFIED

2/2 017

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0121050

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT.

2,6,6,TRIMETHOXY,3,BROMOTETRAHYDROPYRAN (I), N PRIME20 SUBD 1.4648, B. 89-90DEGREES-1.5 MM, WAS PREPD. IN 61PERCENT YIELD BY ADDING AT NEGATIVE10DEGREES 17.8 G N BROMOSUCCINIMIDE TO A SOLN. OF 14.4 G 6,6,DIMETHOXY,DELTA PRIME2,DIHYDROPYRAN IN 14.2 ML ANHYD. MECH, AND STIRRING 2 HR AT 20DEGREES., 2,6,6,TRIMETHOXY,DELTA PRIME3,DIHYDROPYRAN (II), N PRIME20 SUBD 1.4450, B. 62-50DEGREES-1.5 MM, WAS PREPD. IN 50PERCENT YIELD BY REFLUXING A MIXT. OF 13.8 G I AND MECHNA PREPD. FROM 1.41 G NA AND 10.5 ML MECH. II SHOWED IN VITRO ACTIVITY AGAINST INFLUENZA VIRUS TYPE A PR-8 STRAIN. FACILITY: MOSK. INST. TONKOT KHIM. TEKHNOL. IM. LOMONOSOVA, MOSCOW, USSR.

UNCLASSIFIED

172 008
UNCLASSIFIED
TITLE--UNSATURATED ETHERS XXXI. CONDENSATION OF BETA, ETHOXYACROLEIN ACETAL
WITH VINYLALKYL ETHERS AND 1, ALKOXYDIENES. NEW METHOD FOR SYNTHESIZING
AUTHOR--(03)--MAKIN, S.M., ISMAYL, A.A., HERZHNAYA, M.I.
COUNTRY OF INFO--USSR
SOURCE--ZH. ORG. KHIM. 1970, 6(3) 455-9
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--CHEMICAL SYNTHESIS, CONDENSATION REACTION, ETHER, ACETAL,
OXYGEN COMPOUND, DIENE, IMIDE, COMPLEX COMPOUND
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1992/1573
CIRC ACCESSION NO--AP0112567
STEP NO--UR/0365/70/006/003/0455/0459
UNCLASSIFIED

272 008 UNCLASSIFIED PROCESSING DATE--02OCT70
 CIRC ACCESSION NO--AP0112567
 ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE REACTION OF ACROLEIN OR ITS
 DIACETAL WITH N-BROMOSUCCINIMIDE AND ETOH GAVE ETOCH SUB2-CHBRCH(OET)
 SUB2, WHICH WAS DEHYDROBROMINATED TO ETOCH: CHCH(OET) SUB2 (I). THE
 CONDENSATION OF I WITH H SUB2 C:CHOET OR ETOCH:CHCH:CH SUB2 IN THE
 PRESENCE OF ZHCL SUB2 AND BF SUB3 .ET SUB2 O GAVE, RESP.,
 ETOCH:CHCH(OET)CH SUB2 CH(OET) SUB2 (II) OR ETOCH:CHCH(OET)CH SUB2
 CH:CHCH(OET) SUB2 (III). THE CONDENSATION OF H SUB2 C:CHOET WITH III IN
 THE PRESENCE OF BF SUB3 .ET SUB2 O GAVE ETOCH:CHCH(OET)CH SUB2
 CH:CHCH(OET)CH SUB2 CH(OET) SUB2 (IV). THE REACTIONS OF I-IV WITH RR
 PRIME1 NH IN 18PERCENT SOLN. GAVE (RR PRIME1 N-(CH:CH) SUBN CH:N PRIME
 POSITIVE RR PRIME1)CL PRIME NEGATIVE, (R, R PRIME1, AND N GIVEN): H,
 PH, 1; H, PH, 2; ME, PH, 2; H, PH, 3; ME, PH, 3; ME, PH, 4. THE PREPN.
 OF (X(CH:CH) SUBN X PRIME POSITIVE)CL PRIME NEGATIVE (WHERE X IS
 TETRAHYDROQUINOLINO AND N IS 2, 3, OR 4) WAS CARRIED OUT ANALOGOUSLY.

UNCLASSIFIED

U.S.S.R. Acad. Sci. 1970, 6(1), 107-12 (Russ.). The condensation of 2,6-(RO-substituted)- Δ^2 -dihydropyrans with ROH (R is Me or Et in both cases) gave (RO) $_2$ CHCH $_2$ CH:CHCH(OR) $_2$ (I). The condensation of I with R 1 CH:CHOR in the presence of ZnCl $_2$ gave (RO) $_2$ CHCH $_2$ CH:CHCH(OR)CH(R 1)CH(OR) $_2$ (II). Similarly, I reacted with CHR 1 :CR 2 CR 3 :CHOR to give (RO) $_2$ CHCH $_2$ CH:CHCH(OR)CH(R 1)CR 2 CR 3 CH(OR) $_2$ (III). The hydrolysis of II with HCl in the presence of amines gave the following XCH:CHCH:CHCH:CR 1 CH:X $^+$ Cl $^-$ (R 1 and X given): H, PhNH; H, 1,2,3,4-tetrahydroquinolino; Me, PhNH; H, PhNMe. Similarly III with HCl gave XCH:CHCH:CHCH:CR 1 CR 2 :CR 3 CH:X $^+$ Cl $^-$ (R 1 , R 2 , R 3 , and X given): H, H, H, PhNH; H, H, H, 1,2,3,4-tetrahydroquinolino; H, H, H, PhNMe; H, H, H, *p*-ClC $_6$ H $_4$ NH; H, H, H, *m*-FCC $_6$ H $_4$ NH; H, H, H, *p*-MeC $_6$ H $_4$ NH; H, H, H, PhNEt; H, H, Me, PhNH; Me, H, H, 1,2,3,4-tetrahydroquinolino; H, H, Me, 1,2,3,4-tetrahydroquinolino.

CPJR

REEL / FRAME
19800586

Public Health, Hygiene and Sanitation

USSR

UDC 616.9-036.21+576.8+614.47:061.3(574) "1970"

KARAKULOV, I. K., REMENTSOVA, M. M., ZHUMATOV, KH. ZH., MAKINOV, K. A., and
NIKONOVA, T. N.

"Results of the First Combined Congress of Epidemiologists, Microbiologists,
Specialists in Infectious Diseases, and Hygienists of Kazakhstan"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 12, 1971,
pp 134-137

Abstract: The above congress, held in Alma-Ata in June 1970, was attended
by about 1000 persons who read over 400 papers on intestinal infections,
brucellosis, tularemia, tuberculosis, leptospirosis, helminth diseases, and
blood-sucking flies. Most were concerned with particularly widespread
diseases in the Kazakh SSR. Several dealt with the epidemiology and control
of acute intestinal infections (M. N. Yakovleva et al.), reduction of the
incidence of typhoid fever in Alma-Ata Oblast (B. V. Rayushkin et al.),
epidemiological geography of intestinal infections (E. P. Ka'yanova and I. A.
Yalyshev), incidence of typhoid fever (B. V. Rayushkin et al.), seasonality
of typhoid fever (I. I. G. Kozhukhov), dysentery in Kazakhstan during the last
10 years (T. K. Ruzalina and Ye. A. Guzeyev), epidemiology and prevention of
leprosy in the Aral Sea region (Ch. A. Abdirov), diphtheria in Kazakhstan
(K. A. Kostina), epidemiology of salmonellosis (P. P. Popova et al.).
Papers on brucellosis and tularemia included clinical and epidemiological
1/2

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Ref. Code:

APPROVED FOR RELEASE: 09/01/2001

CIA-RDP86-00513R002201910011-4

90232r New method for synthesizing cyanines based on
glutaconaldehyde acetals. Makin, S. M.; Monick, N. W.
Shavrygina, O. A.

USSR

KARAKULOV, I. K., et al., Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 12, 1971, pp 134-137

observations in brucellosis foci after suspension of specific vaccination campaigns (Ye. A. Shnyreva and N. F. Zerkova), brucellosis and economic considerations (S. I. Rybalko), epidemiology of brucellosis (K. D. Zhalilov et al.) epizootiology and epidemiology of tularemia from the ecological and faunistic standpoint (V. I. Pakin et al.), combined natural foci of different diseases - tocoplasmosis, brucellosis, Q fever (S. A. Amireyev), leptospirosis Kazakhstan (I. P. Chernykh). One paper was read on the control of blood-sucking flies in Kazakhstan (. N. S. Zhuk). There were many reports on the clinical aspects of infectious hepatitis, brucellosis, measles, dysentery, and some other diseases.

USSR

UDC 547.821+546.185

MAKITRA, R. G., MAKARUK, M. S., and DIDYCH, M. N., L'vov Polytechnic Institute

"Study of the Systems of Pyridine With Phosphorus Oxychloride, Phosphorus Trichloride, Thionyl Chloride, and Carbon Tetrachloride"

Leningrad, Zhurnal Obshchey Khimii, Vol 42(104), Vyp 8, 1972, pp 1877-1878

Abstract: Pyridine forms a complex with phosphorus oxychloride having a melting point of -55.6° and a composition of 74.6% pyridine. The formula of this adduct is $\text{POCl}_3 \cdot 2\text{Pyr}$. or $\text{POCl}_3 \cdot 3\text{Pyr}$. PCl_3 forms an adduct having the formula $\text{PCl}_3 \cdot 2\text{Pyr}$ having a melting point at -42°C . The thionyl chloride forms two adducts: $\text{SOCl}_2 \cdot 2\text{Pyr}$ having a reported melting point of both -20°C and $+107^{\circ}\text{C}$, and $\text{SPCl}_2 \cdot \text{Pyr}$ with a melting point of -50°C . In the presence of moisture both complexes become hydrated with one molecule of water and the melting point is increased to about 100°C . CCl_4 forms a complex containing 18% pyridine, having a melting point of -56°C .

1/1

1/2 022
TITLE--INTESTINAL MICROFLORA AND AUTOIMMUNE REACTIONS IN CHRONIC COLITIS
-U-
AUTHOR-(03)-ATSEKOVA, I.S., MAKIYEVSKAYA, S.YE., MISAUTOVA, A.A.
COUNTRY OF INFO--USSR
SOURCE--TERAPEVTICHESKIY ARKHIV, 1970, VOL 42, NR 5, PP 36-39
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--PEDIATRICS, COLON, DIGESTIVE SYSTEM DISEASE, ANTIBODY,
IMMUNOLOGY
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3006/1738
CIRC ACCESSION NO--AP0135314
STEP NO--UR/0504/70/042/005/0036/0039
UNCLASSIFIED

2/2 022

UNCLASSIFIED

PROCESSING DATE--27NOV76

CIRC ACCESSION NO--AP0135314

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A SPECIOUS SPECIFIC AND QUANTITATIVE COMPOSITION OF THE FECAL MICROFLORA IN 53 CHILDREN WITH VARIOUS CHRONIC DISEASES OF THE INTESTINE (CHRONIC COLITIS, NONSPECIFIC ULCEROUS COLITIS, FUNCTIONAL DYSKINESIA OF THE INTESTINE) WAS STUDIED. CHANGES IN THE MICROBAL FLORA OF THE FECES WERE REVEALED IN THREE FOURTHS OF THE PATIENTS AND WERE OF A STEADY NATURE INSPITE OF THE IMPROVEMENT OF THE CLINICAL COURSE OF THE DISEASE. CHANGES IN THE SPECIOUS SPECIFIC COMPOSITION OF THE FECAL MICROFLORA WERE ALMOST SIMILAR IN ALL THE THREE GROUPS OF PATIENTS: DYSBACTERIOSIS INCIDENCE AND EXTENT OF ITS MARKEDNESS WERE DIFFERENT IN ALL THE GROUPS AND WITHIN EACH GROUP OF PATIENTS. THERE WAS A DEFINITE RELATIONSHIP BETWEEN THE NATURE OF THE FECAL MICROFLORA AND THE ACCUMULATION OF ANTIMICROBAL AND ANTIINTESTINAL ANTIBODIES IN THE BLOOD SERUM IN ALL THE THREE GROUPS AND PATIENTS, FROM FUNCTIONAL DYSKINESIA TO NONSPECIFIC ULCEROUS COLITIS.

FACILITY: VIRUSO-MIKROBIOLOGICHESKAYA LABORATORIYA AND TERAPEVTICHESKOYE OTD. MOSKOVSKOGO OBLASTNOGE N I KLINICHESKOGO INSTITUTA IM. M. F. VLADIMIRSKOGO.

UNCLASSIFIED

USSR

UDC: 621.396.6.049.75.002

YURKOVSKIY, Ye. V., MAKKAVEYEV, A. A.

"Ways to Increase Packing Density in Printed-Circuit Assembly"

V sb. Obmen opytom v radioprom-sti (Experience Pooling in the Radio Industry--collection of works), vyp. 4, Moscow, 1972, pp 29-30 (from RZh-Radiotekhnika, No 8, Aug 72, Abstract No 8V330)

Translation: The paper shows the feasibility of integral estimation of mounting density, and of using statistical and informational criteria and procedures for quantitative estimation and comparison of printed-circuit board designs with respect to the possibility of tracing connections between elements (junctions) located on the printed-circuit boards. Resumé.

1/1

- 89 -

USSR

UDC 621.385:530.145.6:622

YEGOROV, K. P., MAKKAVEYEV, V. I., KUZ'MICHEV, V. N.

"Optical Beam Wave Guide"

USSR Author's Certificate No 274413, Filed 25 Sep 63, Published 6 Oct 70 (from RZh-Radiotekhnika, No 4, Apr 71, Abstract No 4D439P)

Translation: An optical beam wave guide is proposed with automatic regulation of the position of the optical systems. It contains a system of lens, prism and mirror devices arranged in a climate-control tube. In order to insure constancy of the position of the correcting systems required to maintain the direction of the coherent light beam, the correcting systems are made to rotate in two mutually perpendicular directions the constancy of the position of which is maintained by an automatic position control system.

1/1

USSR

UDC: 532.593

MAKKAVEYEV, V. M.

"Questions of Formulating Problems in Wind Wave Theory"

Tr. koordinats. soveshchaniy po gidrotekhn. (Works of Coordinating Conferences on Hydraulic Engineering), 1970, vyp. 61, pp 17-27 (from RZh-Mekhanika, No 4, Apr 71, Abstract No 4B442)

Translation: It is pointed out that there are two circumstances which impede the development and successful practical implementation of wind wave theory: 1) It has not been possible to arrive at a sufficiently complete description of the simultaneous development of meteorological processes and wind wave processes; 2) the present state of the art in fluid mechanics cannot meet the demands of real processes in the study of wind flow. It is proposed that the concept of body and surface rotational stresses be introduced to the theory of continuous media. It is pointed out that deeper inroads must be made into the dynamics of main flows of turbulent pulsation, that liquid may flow along solid boundaries in laminar flow, even though the rate of sliding flow may be small, that a singular pulsation must be accounted for in laminar flows, etc. A. K. Nikitin.

1/1

- 78 -

USSR

UDC: 621.372.831.11

MAKKOVEYEV, P. M., TSILEVICH, B. N.

"A Device for Connecting Circular Waveguide Sections"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obratzsy, Tovarnyye Znaki,
No 29, 1970, Soviet Patent No 281573, Class 21, filed 26 Jun 67, p 62

Abstract: This Author's Certificate introduces a device for connecting circular waveguide sections. The unit contains a sleeve which encompasses the ends of the sections to be joined, which are fitted with annular grooves. The device also includes clamps; sleeve nuts and packing rings. As a distinguishing feature of the patent, the operational reliability of the device is improved by putting shanks on the clamps which fit into the grooves on the waveguide sections, and by fitting these clamps with slotted end discs which are covered by the sleeve nuts. The packing rings are accommodated in wedge shaped channels formed by the beveled edges of the sleeve faces, the outside surfaces of the waveguide sections, and the end discs of the clamps.

1/1

Central File

SOV/137-59-4-7945

Translation from: Referativnyy zhurnal, Metallurgiya, 1959, Nr 4, p 84 (USSR)

AUTHORS: Maklakov, A.A., Mel'nikov, A.I., Morozov, A.V., Ostapchenko, Ye.P.TITLE: A Method of Obtaining Tri-Barium Tungstate 21

PERIODICAL: Avt. sv. USSR 113045, 15.08.58

ABSTRACT: The described method of obtaining Ba_3WO_6 yields products of greater homogeneity and higher purity than previously known methods. It consists in the joint precipitation of Ba tungstate and Ba carbonate from an aqueous solution of $(NH_4)_2WO_4$, $(NH_4)_2CO_3$ and $Ba(NO_3)_2$. Three weight portions of $(NH_4)_2WO_4$ and $(NH_4)_2CO_3$ are dissolved in 10 weight portions of water, the solutions are mixed, heated up to $60^\circ C$ and a solution of 1 weight portion $Ba(NO_3)_2$ and 7 weight portions of water, heated up to $60^\circ C$, is added. The precipitate is filtrated, dried for 1 hour at $\sim 100^\circ C$ and roasted at $\sim 1,400^\circ C$. Hereby a $BaWO_4 + 2BaCO_3 = Ba_3WO_6 + 2CO_2$ reaction takes place. The yield of the finished product is 96 - 98% of the theoretical amount.

Ye.E.

Card 1/1

85832

S/G19/60/000/017/007/070
A152/A029

5-2630 1043, 1273, 1160

AUTHORS: Maklakov, A.A.; Mel'nikov, A.I.; Morozov, A.V.; Ostapchenko, V.B.

TITLE: A Method for Obtaining Barium Calcium Tungstate 27

PERIODICAL: Byulleten' izobreteniy, 1960, No. 17, p. 20

TEXT: Class 12n, 10. No. 131346¹⁸ (640271/23 of October 2, 1959). This method is used in obtaining barium calcium tungstate for impregnated and pressed film cathodes by means of a combined precipitation of their tungstates and carbonates. It is distinguished by the following special feature: in order to obtain a homogeneous final product, the precipitation is conducted from aqueous solutions and the sediment obtained thereby is subsequently calcinated. IX

Card 1/1

SOV-19-58-4-222/523

AUTHOR: Morozov, A.V., Mel'nikov, A.I., Popov, B.N., Maklakov, A.A.

TITLE: A Metallic-Porous Film Cathode with Two Barium Distributors
(Metallo-poristy plenochnyy katod s dvumya raspredelitelnyami bariya)

PERIODICAL: Byulleten' izobreteniy, 1958, Nr 4, pp 57/58 (USSR)

ABSTRACT: Class 21g, 1301. Nr 111620 (572248, 30 April 1957). Submitted to the Committee for Inventions and Discoveries at the USSR Council of Ministers. The invention improves the quality of metallic-porous film cathodes with two barium distributors with simultaneous simplification of the production process. The cathodes are pressed in the shape of pills of a mixture of active compounds (tungstate, thorate, silicate, vanadate, titanate of barium-calcium), metal (tungsten) and reducing agents (aluminum, titanium, zirconium,

Card 1/2

SCV-19-58-4-222/523

A Metallic-Porous Film Cathode with Two Barium Distributors

carbide, tungsten, silicon, carbon) which are sintered in an inert gas atmosphere and placed under a sponge of metal (tungsten, carbide, titanium, platinum, molybdenum).

Card 2/2

1/2 018 UNCLASSIFIED PROCESSING DATE--090CT70
TITLE--EFFECT OF THE PARAMAGNETISM OF CONJUGATED POLYMERS AND THEIR
COMPLEXES ON NMR SPECTRA AND MACROMOLECULAR MOTION --U--
AUTHOR--(05)--MAKLAKOV, A.I., SHEPELEV, V.I., GOLDGAMMER, K.A., ZGADZAY,
E.A., TARASOV, B.G.
COUNTRY OF INFO--USSR
SOURCE--VYSOKOMOL. SOEDIN. SER. A 1970, 12(2), 394-400
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY, PHYSICS
TOPIC TAGS--PARAMAGNETISM, CONJUGATED POLYMER, COMPLEX COMPOUND,
MACROMOLECULE, SCHIFF BASE, PYRIDINE COMPLEX, ACETYLENE, ELECTRON SPIN,
NMR SPECTRUM
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1989/0251 STEP NO--UR/0459/70/012/002/0394/0400
CIRC ACCESSION NO--AP0106907
UNCLASSIFIED

2/2 018

UNCLASSIFIED

PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AP0106907

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. NMR SPECTRA WERE OBTAINED FOR POLY(SHIFF BASES) (I) CONTG. :CHCH:NRN: (R EQUALS PYRIDINEDIYL) GROUPS, I COMPLEXES WITH BR, POLY(PHENYLACETYLENE) (II), AND II COMPLEXES WITH IODINE AT 77-330DEGREES K. ELECTRON SPIN LATTICE RELAXATION TEMP. DEPENDENCE WAS OBSD. THE CONDITIONS WERE DETD. UNDER WHICH THE PARAMAGNETIC CENTERS PRESENT IN THESE POLYMERS MAY HAVE AN EFFECT ON THE 2ND MOMENT OF NMR ABSORPTION LINES. AN ANOMALOUS EFFECT OF HALOGENS ON THE MOL. MOBILITY OF I AND II WAS OBSD.

UNCLASSIFIED

1/2 015 UNCLASSIFIED PROCESSING DATE--02OCT70
TITLE--MOLECULAR MOTION IN CELLULOSE NITRATES STUDIED BY NUCLEAR MAGNETIC
RESONANCE -U-
AUTHOR--(05)-KOSTOCHKO, A.V., CHENBORISOVA, L.YA., MAKAROV, A.I.,
MAKOVYEVA, G.N., FEUKTISTOVA, O.B.
COUNTRY OF INFO--USSR
SOURCE--VYSOKOMOL. SOEDIN., SER. B 1970, 12(1), 72-4
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--CELLULOSE, NITRATE, NUCLEAR MAGNETIC RESONANCE, PLASTICIZER,
PHTHALATE, ORGANIC PHOSPHATE, GLUCOSIDE, SPIN RELAXATION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1992/0314 STEP NO--UR/0460/70/012/001/0072/0074
CIRC ACCESSION NO--AP0111508

UNCLASSIFIED

2/2 015

UNCLASSIFIED

PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0111508

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE MOL. MOTION IN CELLULOSE NITRATE (I) PLASTICIZED WITH 35-55PERCENT OF DI-BU PHTHALATE, TRICRESYL PHOSPHATE, OR GLYCEROL TRINITRATE WAS INVESTIGATED BY NMR SPECTRA AT MINUS 140 50 MINUS 20DEGREES. A PLOT OF 2ND MOMENT (DELTA H SUB2 PRIME2) VS. TEMP. FOR THE PLASTICIZED I SAMPLES INDICATED THAT DELTA H SUB2 PRIME2 WAS INVERSELY PROPORTIONAL TO TEMP. IN THE RANGE OF MINUS 10 TO PLUS 20DEGREES, PRESUMABLY DUE TO THE FLEXIBILITY OF THE PYRANOSE RING AND HINDERED MOTIONS ABOUT THE GLUCOSIDE BOND C,O,C. THE HIGH MAGNITUDE OF DELTA H SUB2 PRIME2 WAS ACCOUNTED FOR BY A HYPOTHESIS THAT THE CH SUB2 AND SUB2 GROUP REVOLVES ABOUT THE RING AT MINUS 140DEGREES AT A FREQUENCY OF 10 PRIME4, WHICH WAS CONSISTENT WITH THE EXPTL. DATA. INCREASED PLASTICIZER CONTENT CAUSED A CONTRACTION IN THE NMR BAND AND AN INCREASE IN THE SPIN SPIN RELAXATION TIME (CHARACTERISTIC OF MOL. PLASTICIZATION). THE SPIN SPIN RELAXATION TIME FOR I PLASTICIZED WITH EQUAL AMTS. OF EACH OF THE 3 PLASTICIZERS WERE SIMILAR.

UNCLASSIFIED

1/2 016 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--USE OF THIOHYDROXAMIC ACIDS IN ANALYTICAL CHEMISTRY. PHOTOMETRIC
DETERMINATION OF COPPER(II) -U-
AUTHOR--MAKLAKOVA, V.P. *M*
COUNTRY OF INFO--USSR
SOURCE--ZH. ANAL. KHIM. 1970, 25(2), 257-9
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--CHEMICAL ANALYSIS, PHOTOMETRIC ANALYSIS, COPPER, COPPER
COMPLEX, GRAPHIC TECHNIQUE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1994/1945 STEP NO--UR/0075/70/025/002/0257/0259
CIRC ACCESSION NO--AP0115753
UNCLASSIFIED

2/2 016

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0115753

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. N,N

PRIME, DIPHENYL, THIOCARBAMOXYHYDROXAMIC ACID (I) AND N,P,BROMOPHENYL,N PRIME, PHENYLTHIOCARBAMOXYHYDROXAMIC ACID (II) WERE STUDIED AS ANAL. REAGENTS FOR CU(II). CU(II) FORMS 1:2 COLORED COMPLEXES WITH I AND II, WHICH ARE READILY SOL. IN ORG. SOLVENTS. OPTIMUM CONDITIONS FOR THE QUANT. EXTN. ARE 0.1-0.2N H SUB2 SO SUB4 OR HCL, 100-200 FOLD EXCESS OF THE REAGENTS. BEER'S LAW IS OBEYED IN THE 10-100 MUG CU-5 ML CHCL SUB3 RANGE. CA, MG, ZN, CO, NI, CR(III), AND FE(II), 500 MG, AND MN, AL, AND V(IV), 250 MG, DO NOT INTERFERE FE(III) AND V(IV) CAN BE MASKED WITH ASCORBIC ACID, W(VI) AND MO(VI) WITH CITRIC ACID. TO DET. CU IN STEEL DECOMP. 0.1-0.2 G STEEL ON A SAND BATH WITH 10 ML 1:1 HCL AND 1-2 ML HNO SUB3. EVAP. TO DRYNESS, DISSOLVE THE RESIDUE IN 4N H SUB2 SO SUB4, DIL. TO 100 ML WITH H SUB2 O. TO A 10 ML ALIQUOT CONTG. 10-100 MUG CU, ADD 0.5 G ASCORBIC ACID AND 0.5-1.0 G CITRIC ACID, THEN 5 ML 0.01M I OR II IN CHCL SUB3 AND EXT. FOR 1-2 MIN. DET. THE ABSORBANCE OF THE EXT. BY USING A BLUE FILTER (400-50 MMU). CALC. CU CONC. FROM A CALIBRATION CURVE PREPD. FROM STD. SOLNS. FACILITY: ALL UNION SCI. RES. INST. HEAT ENG., CHELYABINSK, USSR.

UNCLASSIFIED

USSR

UDC 533+536.423.1

BOGATYREV, A. F., KOSOV, N. D., MAKLETSOVA, Ye. Ye.

"Barometric Effect of a Binary Helium-Argon Mixture in the 290-800°K Temperature Range"

V sb. Fizika (Physics -- Collection of Works), No 5, Alma-Ata, 1971, pp 94-96 (from RZh-Fizika, No 1, Jan 73, Abstract No 1Ye46)

Translation: The magnitude of the barometric effect arising in gases under nonisothermal conditions was measured. Measurements were made for pure He and four binary mixtures of He with Ar over a wide range of temperatures and pressures. The magnitude of the barometric effect was compared with formulas obtained from elementary kinetic theory. A comparison between theory and experiment shows that they agree within 10%. Authors' abstract.

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Environmental & Ecological Problems

USSR

BLIZHEYEV, V. I., D'YACHKOV, V. I., LERNER, I. B., MISHIN, V. K., NEKRANKINA, G.S.
NIKITINA, Ye. I., DIANOVA, YE. F., and MAKLONOVA, R. Ye.

"Joint Hygienic Study of Atmospheric Pollution in Certain Industrial Centers of
the Central Volga Region"

Sb. nauch. tr. Kuybyshev, NII gigiyeny (Collection of Scientific Works of the
Kuybyshev Scientific Research Institute of Hygiene), No 7, 1972, pp 92-93
(from RZh-Geofizika, Svednyy tom, No 5, 1973, Abstract No 5B504 by L.S.G.)

Translation: A study was made of the contamination of the atmosphere by chemical and oil-refining complexes and of the impact of pollutants on the health and sickness rate of children and on immunohematological indexes of animals. Measures have been elaborated for the elimination and reduction of specific discharges into the atmosphere, for the organization of sanitary shielding of industrial sites, and for improving the health of the child population.

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USSR

UDC 547.26'118

MAKLYAYEV, F. L., KIRILLOV, N. V., FOKIN, A. V., and RUDNITSKAYA, L. S.

"Synthesis of Phosphonocarboxylic Acid Esters With Unlike Radicals"

Leningrad, Zhurnal Obshchey Khimii, Vol 40, No 5, May '70, pp 1014-1015

Abstract: The authors synthesized previously undescribed representatives of phosphonocarboxylic acid esters with unlike alkoxy radicals at the phosphorus by the addition of dialkyl phosphites with unlike radicals to esters of α, β -unsaturated carboxylic acids in the presence of sodium methyolate.

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USSR

FLEYSHMAN, B. S., KRPIVIN, V. F., MAKMAK, S. M.

"Trinary Games"

Mat. Analiz i Ego Pril. [Mathematical Analysis and its Applications -- Collection of Works], Vol 4, Rostov-na-Donu, Rostov University Press, 1972, pp 121-129 (Translated from Referativnyy Zhurnal Kibernetika, No 4, 1973, Abstract No 4V496, by the authors).

Translation: An analytic solution is presented for an antagonistic game, the win function of which $M(x, y)$ takes on three values. In the first problem, the case of a symmetrical matrix game measuring 2×2 is studied. In the second problem, the solution is presented to a continuous game in an m -dimensional unit cube for certain particular cases.

USSR

UDC 669.72+669.73:620.18

MAKOGON, M. B., IGONIN, G. S., and IGONINA, T. N., Siberian Physico Technical Institute imeni V. D. Kuznetsov

"Formation of the Domain Structure in an MgCd alloy. Report 2"

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 30, No 4, Oct 70, pp 727-732

Abstract: A study was made of the effect of the rate of quenching of an MgCd alloy from $T > T_g$ (T_g is the temperature of the order-to-disorder transition) on the microstructure and nature of its change during tempering. The formation of a fine-domain structure in the MgCd alloy in the process of quenching from $T < T_g$ proceeded at a high rate. During formation of the structure stressed appeared which were recorded radiographically. In the process of tempering domain growth and stress discharges took place. The authors thank A. A. TUKHFATULLIN for valuable discussions regarding the results of the work.

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M
USSR

UDC 669.72+669.73:548.0

IGONIN, G. S., MAKOGON, M. B., and IGONINA, T. N., Siberian Physico-Technical Institute

"Formation of the Domain Structure in the Alloy MgCd. I."

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 30, No 3, Sep 78, pp 543-549

Abstract: The formation of the domain structure of the alloy MgCd with ordering is studied. Possible versions of combination of disoriented domains in the (100) plane of the orthorhombic lattice corresponding to the base plane of the hexagonal structure of the disordered alloy are analyzed. The configuration of dislocations in the (100) plane is studied. The boundaries of disoriented domains are a great obstacle for shear propagation.

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USSR

UDC 621.375.82

GODLEVSKIY, A. P., LOPASOV, V. P., and MAKOCIN, M. M.

"Ruby Laser With Frequency Scanning and Stabilization of Radiation Parameters for Laser Spectroscopy"

V sb. Kvant. elektronika (Quantum Electronics -- Collection of Works), No 2(14), Moscow, "Sov. Radio," 1973, pp 68-71 (English summary) (from RZh-Fizika, No 10, Oct 73, Abstract No 10D831 from authors' abstract)

Translation: The article studies a ruby laser with stabilization of the radiation parameters. To achieve stabilization the cavity length was changed at a high speed (up to 6 m/sec) by means of a rotating glass plate placed in the cavity. A regular oscillating mode is obtained with the amplitude, repetition interval, spike length, and radiation divergence all stabilized. Control of the oscillation frequency was effected by means of a Lyot electro-optical filter. The range of oscillation frequency variation per pulse was $0.1-7 \text{ cm}^{-1}$, depending on the amount of scanning voltage, the accuracy of the frequency setting no worse than $\pm 0.01 \text{ cm}^{-1}$. It is suggested that a laser of this type be used to study the ultraweak absorption lines of a gaseous medium placed in the cavity. Bibliography with 13 titles.

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USSR

UDC 621.375.82

MAKOGON, M. M., PONOMAREV, Yu. N., and SERDYUKOV, V. I.

"Neodymium Self-Q-Switched Laser"

V sb. Kvant. elektronika (Quantum Electronics -- Collection of Works), No 2(14), Moscow, "Sov. Radio," 1973, pp 59-61 (English summary) (from RZh-Fizika, No 10, Oct 73, Abstract No 10D836 from authors' abstract)

Translation: The article studies the oscillation of an Nd glass laser in an unstable resonator formed by a flat and a spherical reflector. The dependence of the threshold pumping energy, oscillation energy, and the spatial distribution of laser emission on the resonator length is determined. A close inter-relationship is found between the emission parameters and the drift of the threshold curve. At a certain resonator length 1-to-2 megawatt monopulse oscillation is obtained. The value of this length is used to estimate the variation in the refractive index of the Nd glass according to the population inversion.

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1/2 050 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--LASER RADIATION FREQUENCY CONTROL WITH THE AID OF BIREFRINGENT
CRYSTALS -U-
AUTHOR--(02)-LOPASOV, V.P., MAKOGON, M.M.
COUNTRY OF INFO--USSR
SOURCE--OPTIKA I SPEKTROSKOPIIA, VOL. 18, MAR. 1970, P. 543-545
DATE PUBLISHED---MAR70
SUBJECT AREAS--PHYSICS
TOPIC TAGS--RUBY LASER, LASER STABILITY, OPTIC CRYSTAL, FREQUENCY
CHARACTERISTIC, NEODYMIUM LASER, LASER Q SWITCHING, CALCIUM MINERAL,
LASER PUMPING
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1996/1565 STEP NO--UR/0051/70/028/000/0543/0545
CIRC ACCESSION NO--AP0118548
UNCLASSIFIED

2/2 050
CIRC ACCESSION NO--AP0118548

UNCLASSIFIED

PROCESSING DATE--30OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DESCRIPTION OF A METHOD OF ELECTROOPTICAL FREQUENCY SCANNING OF RUBY LASER RADIATION. ACCORDING TO THE PROPOSED METHOD, FREQUENCY STABILIZATION IS ACHIEVED BY THE USE OF A BIREFRINGENT CALCITE PLATE AND A KDP ELECTROOPTICAL Q SWITCH. THE MAXIMUM PUMPING ENERGY IS FOUND TO EXCEED THE THRESHOLD ENERGY BY ONLY A FACTOR OF 1.3, AS AGAINST A FACTOR OF 5 TO 6 IN THE CASE OF A NEODYMIUM LASER.

UNCLASSIFIED

Aluminum and Its Alloys

M

UDC: 541.133+546.621

DELMARSKIY, Yu. K., ~~MAKOGON, V. E.~~ CHETVERIKOV, A. V., and ZHIGAYLO, A. Ya.,
Institute of General and Inorganic Chemistry, Academy of Sciences Ukrainian
SSR

"Formation of Slime on an Aluminum Anode in Chloride Melts"

Moscow, Zashchita Metallov, Vol. 6, no. 4, Jul-Aug 70, pp 459-461

Abstract: In the electrodeposition of aluminum from a $2\text{AlCl}_3\text{-NaCl}$ salt mixture it was observed that the surface of the soluble aluminum anode, under continuous service, became coated with a heavy layer of black slime, and the anode current yield exceeded 100% liberating gas bubbles. The objective of this study was to determine the causes of slime formation as well as its effect on the cathode current yield. Microscopic examination of the slime collected from the anode and rinsed with alcohol revealed a mass of glittering particles basically comprising aluminum. In a chloride melt the anode current density is the governing factor. At 1 amp/dm^2 , the anode current yield recalculated to Al^{3+} considerably exceeds 100% and the mean ion valence of aluminum computed from loss in weight of the anode is below three. The anode dissolves evenly,

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DELMARSKIY, YU. K., et al, Zashchita Metallov, Vol 6, No. 4, Jul-Aug 70,
pp 459-461

the slime is finely disperse. In this case, the deviation from Faraday's law is due to Al^+ formation. An entirely different picture was observed at an anode current density of 15 amp/dm^2 . The powder on the anode is abundant, the anode current yield hardly exceeds the theoretical, and the mean calculated valence of aluminum is close to three. The slime structure is clearly defined. The anode dissolves unevenly, and its surface erosion is similar to intergranular failure. As for the effect of anodic current density on the cathodic current yield, it is suggested that in electrodeposition of aluminum from chloride melts care must be exercised in selecting along with the temperature, cathode current density, and inter-electrode space, also the proper anode current density: it must differ little from the optimum cathode current density.

Powder Metallurgy

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USER

UDC: 621.77.2

ZHIVOV, L. I., PAVLOV, V. A., SHCHEBINA, V. V., KOLESNIK, F. I. and
MAKOGON, V. N., Zaporozh'ye Machine Building Institute

"Conditions for Hot Extrusion of Rods From Cermet Titanium"

Kiev, Poroshkovaya metallurgiya, No 11, Nov 71, pp 16-21

Abstract: Rods and shapes of intricate cross sections with a density close to monolithic metal may be produced from pre-compressed titanium powder briquettes with the use of appropriate equipment and the knowledge of the power energy parameters of hot extrusion (including force and work of deformation). Characteristic of hot forming of powdered metals and specifically of titanium powder is the fact that the density of the briquette in the first (nonstationary) phase of extrusion is lower than that of monolithic metal. In the second, quasi-stationary region, the densities of both the cake and the finished product are commensurate and approach that of monolithic metal. The stress-deformation relationship characteristic of a solid metal may be applied with reasonable accuracy to powdered materials. Considered here is the hot extrusion of pure titanium

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ZHIVOV, L. I., et al, Foroshkovaya metallurgiya, No 11, Nov 71, pp 16-21

powders and those alloyed with tungsten carbide (up to 30%). Use is made of correction coefficients for crank press tests to correlate the data on stresses and deformations by simple mathematical relationships. A romograph is proposed for rapid determination of both specific and over-all stresses of extrusion of cermet materials. (5 illustrations, 1 table, 2 bibliographic references).

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USSR

UDC 541.135.52

KUKOZ, F. I., KUDRYAVTSEV, YU. D., MAKOGON, YU. O., and FRESENKO, L. N.,
Novocherkassk Polytechnic Institute

"Behavior of Nickel During a-c Electrolysis in Alkali Solutions. 1. Effect
of the Alkali Nature and the Current Density"

Moscow, Elektrokimiya, Vol 7, No 7, Jul 71, pp 990-994

Abstract: The intense destruction under certain conditions, of nickel electrodes in alkaline solutions by a-c electrolysis was experimentally investigated on electrodes in the form of rectangular plates of a total area of approximately 1 cm^2 of smooth nickel, type NP-2. Symmetrical and asymmetrical alternating currents with different amplitude values and similar duration of half-periods of anode and cathode currents were obtained. Destruction of Ni took place only when $i_c \cdot i_a \geq 1$ and $i_a \neq 0$, where i_c and i_a are the amplitudes of currents in the cathodic and anodic half-periods, respectively. Tabulated and experimental data show that the destruction rate increases in the series LiOH, NaOH, and KOH and passes the maximum at $i_a = 0.25 \text{ a/cm}^2$ for constant value of $i_c = 1 \text{ a/cm}^2$ and that on the boundary metal-
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KUKOZ, F. I., et al., Elektrokhimiya, Vol 7, No 7, Jul 71, pp 990-994

-solution there exists a linear impedance by current densities up to 1 a/cm^2 . It was found that the destruction of Ni is mainly dependent on processes on the surface of the electrode during the cathodic half-period of polarization and that the effect of cations of the alkaline metal in the destruction process of Ni is apparently combined with the swelling of reducible Ni hydroxides. Two illustrations, one table, six bibliographic references.

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USSR

KHUTORNOY, A. M., SOFRONKOV, A. N., and MAKORDEY, F. V.

"Radiographic Study of Alloyed Oxide Films on Nickel in an Alkaline Environment at Increased Temperatures"

Moscow, Zashchita Metallov, Vol 6, No 6, Nov-Dec 70, pp 687-689

Abstract: This article contains the results of a study of the behavior of nickel oxidized in advance -- pure and with additives of Li, Ba, Al, Mn -- in an 85% solution of KOH at a temperature of 150° and an oxygen pressure of 2 atm. The intensities of the (200) NiO line and the (003) γ -NiO(OH) line as functions of the time the samples are in the alkaline environment are presented. From the variation of the intensities of these lines and the colors of the samples as functions of the time they are in the alkali, it can be concluded that a nickel oxide film is formed on the surface of the pure metal samples during a period of 20 hours in the alkali (the (200) NiO line reaches a maximum at this time). Between 20 and 60 hours there is rapid formation of the hydroxide γ -NiO(OH). It is proposed that the formation of the hydroxide as a result of diffusion of the Ni^{2+} ions through the NiO layer takes place until the thickness of the γ -NiO(OH) layer reaches the magnitude at which the diffusion rate of the Ni^{2+} ions becomes stationary. The decrease in intensity of

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KHUTORNOY, A. M., et al, Zashchita Metallov, Vol 6, No 6, Nov-Dec 70, pp 687-689

the (003) NiO(OH) lines at 100 hours indicates thickening of the hydroxide film, which is possible as a result of the transition of γ -NiO(OH) to soluble oxides or other soluble nickel compounds.

By comparing the variations of the (003) γ -NiO(OH) lines, it is concluded that the film of γ -NiO(OH) hydroxide formed on the previously oxidized nickel is thicker than on the pure nickel. This is explained by an increase in the width of the diffusion zone for Ni^{2+} ions as a result of nickel oxide formed earlier. This complicates diffusion of the Ni^{2+} ions to the surface of the sample. From the variation of the intensity of the (003) γ -NiO(OH) lines it follows that the thickness of the hydroxide film passes through a series of minima and maxima. This was also noted for the pure nickel samples. The consequences of adding Li, Ba, Al, and Mn and the mechanisms of their effects are discussed briefly. No incorporation of barium in the NiO lattice was detected. On adding lithium there was earlier and more intense formation of the hydroxide. It is concluded that adding aluminum leads to the formation of a film preventing the diffusion of nickel and inhibition of the formation of the hydroxide. There is intense formation of the hydroxide in the presence of manganese explained by the incorporation of manganese in the crystal lattice of the nickel oxide.

2/2

Acc. Nr: **AP0044145**

Ref. Code: UR 0244

PRIMARY SOURCE: Voprosy Pitaniya, 1970, Vol 29, Nr 1,
pp 12-15

ABSORPTION OF THE MORSHIN HEALTH-RESORT MINERAL WATER FROM THE
SMALL INTESTINE BEFORE AND AFTER ITS INTAKE IN PATIENTS WITH
GASTRITIS

V. G. Denisuk, R. P. Makos (Ivano-Frankovsk and health resort Morshin)

Summary

Absorption of sodium chloride, glucose, potassium iodide, ether and blood plasma from the jejunum was investigated in gastritic patients with the aid of a special tube. In patients suffering from anacid gastritis the absorption was found to be deferred, in those with hyperacid gastritis — intensified, whereas in normacid cases no material changes in absorption were on record. On introduction into the stomach of the chlorosulfate-sodium-magnesium mineral water of the health resort Morshin with total mineralization amounting to 380—390 g/l its absorption in the first 15 minutes gained in strength, being then depressed for a short while and revived afresh thereafter. Following introduction of the mineral water (especially of its 1.4% hypertonic solutions) into the duodenum and also jejunum its absorption was inhibited. After a course of treatment at the health resort Morshin the absorption was noted to become normal mostly in patients with anacid gastritis who had taken hypertonic solutions of the mineral water.

REEL/FAME
19770626

USSR

UDC: 638.61

BUDOVSKIY, I. I., MAKSEVSKIY, V. V., MELISHCHUK, I. S., REZNITSKIY, M. S., SOLOMKO, A. A., TRON'KO, V. D., PALENCHUK, M. R., Kiev State University

"A Meter for Determining High-Frequency Power Transmission With the Use of a Laser Signal"

Moscow, Pribery i Tekhnika Eksperimenta, No 3, May/Jun 72, pp 110-112

Abstract: The paper describes an instrument for measuring high levels of power passing through transmission lines which operate in the 10 kHz - 30 MHz range. The meter is shown schematically in Fig. 1a. A laser beam with wavelength $\lambda = 1.15 \mu$ passes successively through electro-optical and magneto-optical crystals of GaAs and $Y_3Fe_5O_{12}$ located between polarization prisms P_1 . The relative intensity of the laser signal at the output of the optical system is $S/S_0 = [A - B(1 - \cos \Delta\varphi)] [1 + \cos 2\delta]$, where $A = \frac{1}{2} \cos^2(\alpha - \beta)$, $B = \frac{1}{2} \sin 2\alpha \sin 2\beta$; $\Delta\varphi = \Delta\varphi_0 + \Delta\varphi_V$, $\Delta\varphi_0$ is the phase shift which is independent of the field, $\Delta\varphi_V$ is the phase delay induced by the electric field, $\delta = \gamma + \Delta\phi_I$, $\Delta\phi_I$ is the rotation of the polarization plane of the optical beam determined by the Faraday effect and dependent on the current in the magnetizing system, γ is the angle between polarization prisms P_2 and P_3 , α and β are the angles

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BUDOVSKIY, I. I. et al., Priory i Tekhnika Eksperimenta, No 3, May/Jun 72,
pp 110-112

between the axis x_1 of the GaAs crystal and polarization prisms P_1 and P_2 . Angles α , β and γ are illustrated in Fig. 1b.

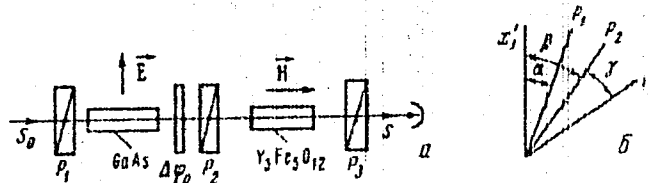


Fig. 1: a--schematic of the power meter; b--relative orientation of the polarizers.

A diagram of the power meter is shown in Fig. 2. The unit is a section of coaxial channel with wave impedance of 75Ω with rectangular inner conductor 4 fastened between washers 2. Crystals of GaAs 6 and $Y_3Fe_5O_{12}$ 7 are fastened to inner conductor 4 at right angles to each other. The crystals measure 2×2 mm in cross section. The GaAs crystal has a 45° cut which acts as a rotating mirror. Conductive cement is used to fasten electrode 5 to

USSR

BUDOVSKIY, I. I. et al., *Pribory i Tekhnika Eksperimenta*, No 3, May/Jun 72, pp 110-112

the top of the GaAs crystal. The electrode is connected to the outer conductor 3. The central polarizer P_2 is a polaroid film 11, cemented between two crystals. Polarization prisms 10 and 8, as well as λ -wave plate 9, are used for the necessary adjustment. The meter is connected to the coaxial channel by means of rf disconnects 1.

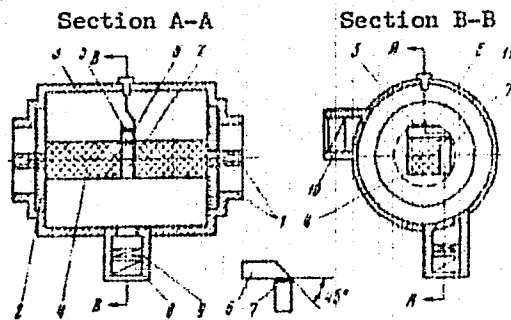


Fig. 2. Simplified diagram of the power meter.

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BUDOVSKIY, I. I. et al., Pribory i Tekhnika Eksperimenta, No 3, May/Jun 72, pp 110-112

A study of the frequency response of the meter showed a sharp drop in the band above 600 kHz. This is caused by a temperature increase due to losses from high hysteresis impedance. This impedance is appreciably reduced by placing the $Y_3Fe_5O_{12}$ crystal in a transverse magnetic field. The optimum field strength was found to be close to 500 oersteds.

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- 117 -

1/2 012 UNCLASSIFIED PROCESSING DATE--23OCT7
TITLE--FUSIBILITY OF SALT SYSTEMS CONTAINING URANIUM TRICHLORIDE -U-

AUTHOR--(05)-DESYATNIK, V.N., MELNIKOV, YU.T., NICHKOV, I.F., RASPOPIN,
S.P., MAKOSOV, V.V.
COUNTRY OF INFO--USSR

SOURCE--AT. ENERG. 1970, 28(3), 247-9

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--URANIUM COMPOUND, CHLORIDE, MOLTEN CHLORIDE, FUSED SALT, LEAD
COMPOUND, EUTECTIC

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1997/1577

STEP NO--UR/0089/70/028/003/0247/0249

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272 012

UNCLASSIFIED

PROCESSING DATE--23OCT;

CIRC ACCESSION NO--AP0120356

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PHASE DIAGRAM OF THE UCL SUB3-PBCL SUB2-UCL SUB4 SYSTEM, WITH POLYTHERMAL SECTIONS FOR 100-800DEGREES IS PRESENTED. THE UCL SUB3-PBCL SUB2 SYSTEM ALWAYS CONTAINS UCL SUB4 AS A RESULT OF ITS FORMATION (TOGETHER WITH PB) IN THE INTERACTION OF UCL SUB3 AND PBCL SUB2; HENCE, IT SHOULD BE REGARDED AS TERNARY SYSTEM, WITH 2 EUTECTICS CONTG. 11 AND 25PERCENT UCL SUB3 AND AT 473 AND 478DEGREES, RESP., AND WITH A COMPD. 4PBCL SUB2. UCL SUB3, AT 512DEGREES.

UNCLASSIFIED

USSR

MISKARLI, A. K., MAKOV, N. N., and PROKOSHEV, V. A., Institute of Inorganic and Physical Chemistry

"Study of Ion-Exchange Sorption on Cations on Azerbaydzhan SSR Bentonites"

Baku, Doklady Akademii Nauk Azerbaydzhanskoy SSR, Vol 26, No 8, 1970, pp 26-29

Abstract: The article describes results of a study of regularities in the ion-exchange sorption of microquantities of cesium, strontium and calcium on Azerbaydzhan SSR bentonite from macrocomponent solutions. Equivalence of cation exchange on bentonite with a linear and a convex isotherm is established and exchange reaction constants are determined.

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Acc. Nr. AP0053744

Abstracting Service:
CHEMICAL ABST.

Ref. Code

6520 4R0080

111870q Synthetic latexes. X. Determination of optimum conditions for the emulsion polymerization of styrene. Makovetskaya, K. N.; Beresnev, V. N.; Smirnov, N. (Leningrad. Tekhnol. Inst. im. Lensovet, Leningrad, USSR). Zh. Prikl. Khim. (Leningrad) 1970, 43(1), 126-31 (Russ). Math. anal. showed that the max. polymn. rate to obtain stable latex in the redox-initiated emulsion polymn. of styrene could be obtained with $\text{NaO}_2\text{SCH}_2\text{OH}$ -cumene hydroperoxide ratio 1:0.634 or 1:2. A secondary process apparently decreased the concn. of the peroxide radicals. The assumption was confirmed that the processes leading to destruction of the radicals and macroradicals during the polymn. increases the stability of the latex. DBJR

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REEL/FRAME
19830805

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1/2 027 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--CREEP AND LONG TERM STRENGTH OF THE VN-2 ALLOY AT HIGH TEMPERATURES
-U-
AUTHOR--(02)-KRIVENYUK, V.V., MAKOVETSKI I.V.
COUNTRY OF INFO--USSR
SOURCE--PROBLEMY PROCHNOSTI, VOL. 2, MAR. 1970, P. 29-32
DATE PUBLISHED----MAR 70
SUBJECT AREAS--MATERIALS
TOPIC TAGS--HIGH TEMPERATURE EFFECT, MATHEMATIC EXPRESSION, DURABILITY,
METAL CREEP, MECHANICAL STRENGTH/(U)VN2 ALLOY
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--2000/0197 STEP NO--UR/3663/70/002/000/0029/0032
CIRC ACCESSION NO--AP0123966
UNCLASSIFIED

2/2 027

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0123966

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. EXPERIMENTAL INVESTIGATION OF THE CREEP AND LONG TERM STRENGTH OF THE VN-2 ALLOY AT TEMPERATURES RANGING FROM 1000 TO 1400DEGC. EXPONENTIAL RELATIONS ARE ESTABLISHED BETWEEN THE STRESS AND THE INITIAL STRAIN RATE, AND ALSO BETWEEN THE INITIAL STRESS AND THE DURABILITY. THE ITU-SHIMOKIN (1923) EQUATION IS FOUND USEFUL FOR DESCRIBING THE GENERAL BEHAVIOR OF THE MECHANICAL PROPERTIES OF MATERIALS AS A FUNCTION OF TEMPERATURE. FACILITY: AKADEMIIA NAUK UKRAINSKOI SSR, INSTITUT PROBLEM PROCHNOSTI, KIEV, UKRAINIAN SSR.

UNCLASSIFIED

USSR

M
UDC 621.1

VOLOSHCHENKO, A. P., TRET'YACHENKO, G. N., MAKOVETSKIY, I. V.

"Concerning the Heat Resistance of Gas Turbine Blades in a Flow of Fuel Combustion Products"

Kiev, Problemy Prochnosti, No 6, June 1970, pp 3-9

Abstract: In the article are presented the results of research on change of the chemical composition, the microhardness, and the metal structure of the surface layer of models of the working vanes of gas turbines under conditions of the simultaneous action of thermal cycling (four cycles per minute), and static tension which simulates the action of centrifugal forces upon the working vanes under pulse conditions of turbine operation.

The alloyed steels tested were EI826, EI765 and EI827. The greatest change in chemical composition of the surface of the alloy occurred in the case of the EI827 (12 kg/mm²; 24,970 cycles). All three were found to be structurally stable under the conditions of the test regime for 100 hours at 800°C with and without static tension. Photomicrographs show that in EI765 incipient changes involve a coagulation of particles in the intermetallic phase.

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USSR

UDC 632.954

BUZANOV, I. F., NESTERENKO, N. I., MAKOVETSKIY, K. A., All-Union Scientific Research Institute of Sugar Beets

"Testing Ronite on Sugar Beet Fields"

Moscow, Khimiya v Sel'skom Khozyaystve, No 9, 1971, pp 47-50

Abstract: In 1968-1969, a study was made of the effect of ronite (S-ethylcyclohexylthiolcarbamate) on weeds and sugar beets (under field conditions) and also on some physiological processes occurring in sugar beet plants (under laboratory conditions). Application of the herbicide ronite to the sugar beet fields either before planting or before appearance of shoots destroyed 40-60 percent of the weeds. The ronite was identically effective against monocotyledonous and dicotyledonous weeds. Increased doses of ronite delayed the shoots somewhat and suppressed the young sugar beet plants. During the initial period, as a result of suppression by the herbicide the sugar and hydrocarbon content increased in the plants, and the respiration intensity decreased. The herbicide had practically no effect on the intake of mineral nutritive elements. On application of the ronite, the sugar beet root harvest did not drop, but the sugar content and quality were reduced.

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Reikhsfel'd, V. O.; Lein, B. I.; Makovetskii, K. L. (Leningrad. Tekhnol. Inst. - im. Lensovet, Leningrad, USSR). *Dokl. Akad. Nauk SSSR* 1970, 190(1), 125-7 [Chem] (Russ). The catalytic activity of π -crotylnickel halides (I) and their complexes with AlBr_3 or $\text{Ni}(\text{OAc})_2$ in the cyclic trimerization of 1-hexyne (Ia), 2-heptyne, 4-octyne, and $\text{PhC}\equiv\text{CH}$ (Ib) was investigated. The reactions were carried out in C_6H_6 at 50° . A mixt. of cyclic trimers, 90% of which was 1,3,5- $\text{Et}_3\text{C}_3\text{H}_3$ (II), was obtained in 98% yield from Ia in the presence of $(\pi\text{-C}_4\text{H}_7\text{NiCl})_2$, while 1,2,4- $\text{Bu}_3\text{C}_3\text{H}_3$ was obtained exclusively in 90% yield with $(\pi\text{-C}_4\text{H}_7\text{NiI})_2$. Ib gave chiefly linear polymers in the presence of I, but the reaction could be shifted to favor the formation of II when $(\pi\text{-C}_4\text{H}_7\text{NiI})_2\cdot\text{Ni}(\text{OAc})_2$ was used as catalyst. The presence of π -allyl groups was not a necessary condition for the catalytic activity since $(\pi\text{-C}_4\text{H}_7)_2\text{Ni}\cdot 2\text{AlBr}_3$ and thermally activated NiCl_2 were also effective catalysts. Thus, the presence of a complex of monovalent Ni is apparently more important than the manner in which it is stabilized.

DBJR

REEL/FRAME

19780625

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Acc. Nr.

AT0045639

Abstracting Service:
CHEMICAL ABST.

Ref. Code

UR0020

89918n Cyclic trimerization of mono- and disubstituted
acetylenes under the influence of π -allyl complexes of nickel.
Reikhsfel'd, V. O. YAN, B. F. ...

USSR

UDC 632.954

RUDAVSKIY, V. G., KUCHEROVA, M. N., SHIRANKOV, D. F., and MAKOVETSKIY, P. S.
Ukrainian Agricultural Academy

"Herbicidal Activity of Some Halocarboxylic Acid Derivatives (Brief Communication)"

Moscow, Khimiya v Sel'skom Khozyaystve, Vol 9, No 6, 1971, p 53

Abstract: The authors prepared some halocarboxylic acid derivatives and studied their herbicidal activity under hothouse conditions. The herbicidal activity of the compounds are graded visually according to a 10-point system (0: no inhibition; 1-2: very weak inhibition; 3-4: weak inhibition; 5: medium inhibition; 6-7: strong inhibition; 8-9: very strong inhibition; 10: total plant destruction). The article tabulates the results.

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USSR

UDC 620.17

AZARKEVICH, L. B., BLAYKHMAN, YE. M., MAKOVETSKIY, V. A., and MIL'KOV, V. G.

"A Rubber-Like Optically Sensitive Material on the Basis of Oligodiene Epoxy EDI-3A"

Tallin, VII Vses. Konf. po Plyarizats.-Optich. Metodu Issled. Napryazh., 1971
 -- Sbornik (Seventh All-Union Conference on the Polarization-Optical Method
 of Stress Research -- Collection of Works), Vol 2, 1971, pp 106-109 (from
 Referativnyy Zhurnal, Mekhanika, No 2, Feb 72, Abstract No 2V1656)

Translation: A report is given on the composition and optomechanical properties of optically sensitive materials made of the oligodiene epoxy EDI-3A in combination with epoxy resins. When applied as photoelastic coatings such materials make possible the measurement of plastic deformations from 2 to 30%. A calibration diagram is presented for one of the materials. Samples from the obtained materials were subjected to repeated loadings (stretching or pure fracture), and on the basis of 1.5 -- 2.0 thousand cycles the stability of the optomechanical properties of the photoelastic coating was shown. In addition, these materials possessed low optical sensitivity. The last two properties are particularly useful in the measurement of accumulated deformations during repeated loadings.

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USSR

UDC 535.34:543.42:541.8

BOLDESKUL, I. E., EGOROV, Yu. P., MAKOVETSKII, Yu. P., RYL'TSHV, E. V.,
FESHCHENKO, N. G. (Institute of Organic Chemistry, UkrSSR Academy of
Sciences, Kiev)

"Inter-ion Oscillations in Phosphonium Salts Studied With Long-Wave IR
Absorption Spectra"

Kiev, Teoreticheskaya i Eksperimental'naya Khimiya, Vol 9, No 5, Sep-Oct
73, pp 668-672

Abstract: Long-wave IR spectroscopy was used to study the properties of
the inter-ion bond of tri- and tetra-alkyl phosphonium halides. Dipole-
dipole association of ion pairs -- phosphonium salts caused a decrease in
the elasticity of the cation-anion bond. In tertiary phosphonium salts
this bond was less strong than in the corresponding ammonium salts,
probably because the P-H group is a weaker proton donor to the H bond
than is the N-H. The frequencies of the γ_G cation-anion oscillation
in the quaternary phosphonium and ammonium salts were the same within
the limits of error of the determination.

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USSR

UDC 535.34.543.42.541.8

BOLDESKUL, I. YE., YEGOROV, YU. P., MAKOVETSKIY, YU. P., RYL'TSEV, YE. V.,
and FESHCHENKO, N. G., Institute of Organic Chemistry, Academy of Sciences
USSR, Kiev

"Spectroscopical Investigation of the Reaction Mechanism of Phosphonium
Salts with Carboxylic Acids in Solutions"

Kiyev, Teoreticheskaya i Eksperimental'naya Khimiya, Vol 9, No 3, May-Jun
73, pp 350-356

Abstract: Intermolecular reactions of quaternary phosphonium salts

$(C_3H_7)_4P^+Hal^-$ ($Hal^- = I^-, Br^-, Cl^-$) with proton donors stronger than alcohols
-- the carboxylic acids ($RCOOH$, $R = CH_3, CCl_3, CF_3$) were investigated in
 CCl_4 solutions by means of IR spectroscopy. It has been shown that the
reaction occurs through the formation of a complex with the H-bond, and that
it is irreversible. A mechanism for this reaction has been proposed,
according to which a halide anion of the salt is exchanged for a carboxylate
anion. Since the rate of this process is symbatic with the proton donating
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USSR

BOLDESKUL, I. YE., et al., Teoreticheskaya i Eksperimental'naya Khimiya,
Vol 9, No 3, May-Jun 73, pp 350-356

properties of these acids and with the proton accepting properties of the
salt H-bonds, it seems reasonable that the H-bond formation is the first
stage of this reaction.

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USSR

UDC 547.26.127

BOROVIKOV, YU. YA., RYL'TSEV, YE. V., BOLDESKUL, I. YE., PESHCHENKO, N. G., MAKOVETSKIY, YU. P., YEGOROV, YU. P., Institute of Organic Chemistry, Kiev, Academy of Sciences Ukrainian SSR

"Dielectric Study of Trialkylphosphine Derivatives"

Leningrad, Zhurnal Obshchey Khimii, Vol 40, No 9, Sep 70, pp 1957-1962

Abstract: A study of the interaction between the molecules of trialkylphosphine oxides and their analogues in solutions by the method of dielectric permeability is reported. Trialkylphosphine oxides, trioctylphosphine sulfide, -selenide, -telluride and tetraalkylphosphine iodide were investigated. It was determined that the dipole moments and atomic polarizations of the trialkylphosphine oxides depend on the length of the hydrocarbon chain. The dipole moments of trioctylphosphine oxide, -sulfide, -selenide, and -telluride were identical within experimental error. Trioctylphosphine oxide and tetraoctylphosphine iodide are associated according to the antiparallel type in solvents of low dielectric

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USSR

BOROVIKOV, YU. YA., et al, Zhurnal Obshchey Khimii, Vol 40, No 9, Sep 70, pp 1957-1962

permeability. The degree of association of trioctylphosphine oxide is higher in carbon tetrachloride than in benzene, and in chlorobenzene, trifluorobenzene, and acetone it is monomeric. The association of tetraoctylphosphine iodide persists even in solvents with high ϵ ; their dipole moments are close to values corresponding to complete charge transfer from P to I.

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USSR

UDC: 539.163.546.662 (3)

GAVRILYUK, V. I., GROMOV, K. YA., KLYUCHNIKOV, A. A., KUPRYASHKIN, V. T., LATYSHEV, G. D., MAKOVETSKIY, YU. V., and FEOKTISTOV, A. I.

"Studying the Internal Conversion Electron Spectrum of ^{146}Gd "

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Fizicheskaya, Vol 37, No 9, 1973, pp 1839-1845

Abstract: The authors study the individual sections of the internal conversion electron spectrum of ^{146}Gd with the aid of a $\sqrt{2}$ magnetic beta-spectrometer with high discrimination. This involved three problems: 1. More accurate measurement of conversion line intensity on the L-subshells of atoms for gamma-114.67, gamma-115.52, and gamma-154.58 than has been done previously in order to determine more precisely the E2-component admixture in these M1-transitions. 2. Study the possible direct transitions K260.19, $2^- \rightarrow 4^-$ and K269.28, $1^- \rightarrow 3^-$ according to the decay scheme. 3. Detect the K421 and K576 transitions. The results show that the calculated spectrum was more compressed than the experimental. Further study of the levels of ^{146}Eu will show what is the real order of the levels.

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USSR

UDC 539.121.72/75

VISHNEVSKIY, I. N., GAVRILYUK, V. I., KUPRYASHKIN, V. T.,
LATYSHEV, G. D., MAKOVETSKIY, YU. V., and KHALOV, V. G., In-
stitute of Nuclear Research Academy of Sciences, Uk-
rainian SSR

"Annihilation of Positrons in Copper and Brass Subjected to
Different Heat Treatments"

Kiev, Ukrainskiy Fizicheskiy Zhurnal, Vol 18, No 10, October
1973, pp 1599-1604

Abstract: Using a high-resolution magnetic spectrometer, the
authors find the distributions of the annihilation quanta by
energy $\varrho(E)$ and the distribution of electrons by impulses n
(p_z) in samples of copper and brass subjected to different
heat treatments. They find that for the annealed samples of
copper and brass, broader distributions are produced for $\varrho(E)$
and $n(p_z)$ than for the quenched ones. This effect may be

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